



# SEA POWER 21

By Adm. Vern Clark, Chief of Naval Operations

*Adm. Clark has written numerous articles and continues to speak about his vision for a fully-networked joint warfighter embodied in the vision for Sea Power 21. CHIPS' editors had the opportunity to talk with Adm. Clark and hear him speak about how Sea Power 21 will tie together the Naval, Joint and national information grid, at the USNI Warfare Exposition and Symposium, Virginia Beach, Va., Oct. 2, 2002. At a lively question and answer session, one young Sailor challenged the CNO doubting that the Navy's transformation could be done — the CNO countered, "You just watch us, but we would rather have you join us." Excerpts are taken from the CNO's article for Proceedings Magazine (October 2002 Volume 128/10/1,196), "Sea Power 21— Projecting Decisive Joint Capabilities" and the admiral's remarks at the symposium. At left: U. S. Navy photo by PH3 Yesenia Rosas.*

...The 21st century sets the stage for tremendous increases in Naval precision, reach, and connectivity, ushering in a new era of joint operational effectiveness. Innovative concepts and technologies will integrate sea, land, air, space and cyberspace to a greater extent than ever before. In this unified battlespace, the sea will provide a vast maneuver area from which to project direct and decisive power around the globe. Future Naval operations will use revolutionary information superiority and dispersed, networked force capabilities to deliver unprecedented offensive power, defensive assurance, and operational independence to Joint Force Commanders. Our Navy and its partners will dominate the continuum of warfare from the maritime domain — deterring forward in peacetime, responding to crises, and fighting and winning wars. By doing so, we will continue the evolution of U.S. Naval power from the blue-water, war-at-sea focus of the "Maritime Strategy" (1986), through the littoral emphasis of "... From the Sea" (1992) and "Forward ... from the Sea" (1994), to a broadened strategy in which Naval forces are fully integrated into global joint operations against regional and transnational dangers.

The events of 9-11, tragically illustrated that the promise of peace and security in the new century is fraught with profound dangers: nations poised for conflict in key regions, widely dispersed and well-funded terrorist and criminal organizations, and failed states that deliver only despair to their people. These dangers will produce frequent crises, often with little warning of timing, size, location or intensity. Associated threats will be varied and deadly, including weapons of mass destruction, conventional warfare, and widespread terrorism. Future enemies will attempt to deny us access to critical areas of the world, threaten vital friends and interests overseas, and even try to conduct further attacks against the American homeland. These threats will pose increasingly complex challenges to national security and future warfighting.

Previous strategies addressed regional challenges. Today, we must think more broadly. Enhancing security in this dynamic environment requires us to expand our strategic focus to include both evolving regional challenges and transnational threats. This combination of traditional and emerging dangers means increased risk to our nation. To counter that risk, our Navy must expand its striking power, achieve information dominance, and develop

transformational ways of fulfilling our enduring missions of sea control, power projection, strategic deterrence, strategic sealift, and forward presence.

Three fundamental concepts lie at the heart of the Navy's continued operational effectiveness: Sea Strike, Sea Shield and Sea Basing, illustrated in Figure 1. Sea Strike is the ability to project precise and persistent offensive power from the sea; Sea Shield extends defensive assurance throughout the world; and Sea Basing enhances operational independence and support for the joint force. These concepts build upon the solid foundation of the Navy-Marine Corps team, leverage U.S. asymmetric advantages, and strengthen joint combat effectiveness.

We often cite asymmetric challenges when referring to enemy threats, virtually assuming such advantages belong only to our adversaries. Sea Power 21 is built on a foundation of American asymmetric strengths that are powerful and uniquely ours. Among others, these include the expanding power of computing, systems integration, a thriving industrial base, and the extraordinary capabilities of our people, whose innovative nature and desire to excel give us our greatest competitive advantage.

Sea Strike, Sea Shield and Sea Basing will be enabled by ForceNet, an overarching effort to integrate warriors, sensors, networks, command and control, platforms, and weapons into a fully netted, combat force. We have been talking about network-centric warfare for a decade, and ForceNet will be the Navy's plan to make it an operational reality. Supported by ForceNet, Sea Strike, Sea Shield and Sea Basing capabilities will be deployed by way of a Global Concept of Operations that widely distributes the firepower of the fleet, strengthens deterrence, improves crisis response, and positions us to win decisively in war.

## Projecting Decisive Combat Power

Projecting decisive combat power has been critical to every commander who ever went into battle, and this will remain true in decades ahead. Sea Strike operations are how the 21st century Navy will exert direct, decisive, and sustained influence in joint campaigns. They will involve the dynamic application of persistent intelligence, surveillance, and reconnaissance; time-sensitive strike; ship-to-objective maneuver; information operations; and covert strike to deliver devastating power and accuracy in future campaigns. Information gathering and management are at the

heart of this revolution in striking power. Networked, long-dwell Naval sensors will be integrated with national and joint systems to penetrate all types of cover and weather, assembling vast amounts of information. Data provided by Navy assets — manned and unmanned — will be vital to establishing a comprehensive understanding of enemy military, economic, and political vulnerabilities. Rapid planning processes will then use this knowledge to tailor joint strike packages that deliver calibrated effects at precise times and places.

... Information superiority and flexible strike options will result in time-sensitive targeting with far greater speed and accuracy. Military operations will become more complicated as advanced intelligence, surveillance, and reconnaissance products proliferate. Expanded situational awareness will put massed forces at risk, for both friends and adversaries. This will compress timelines and prompt greater use of dispersed, low-visibility forces. Countering such forces will demand speed, agility and streamlined information processing tied to precision attack. Sea Strike will meet that challenge.

The importance of information operations will grow in the years ahead as high-technology weapons and systems become more widely available. Information operations will mature into a major warfare area, to include electronic warfare, psychological operations, computer network attack, computer network defense, operations security and military deception. Information operations will play a key role in controlling crisis escalation and preparing the battlefield for subsequent attack. This U.S. asymmetric [advantage] will be a critical part of Sea Strike.

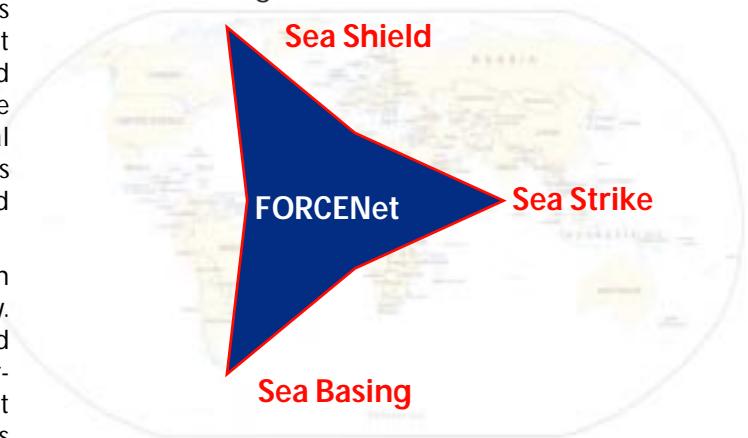
When we cannot achieve operational objectives from over the horizon, our Navy-Marine Corps team moves ashore. Using advanced vertical and horizontal envelopment techniques, fully netted ground forces will maneuver throughout the battlespace, employing speed and precision to generate combat power. Supported by sea bases, we will exploit superior situational awareness and coordinated fires to create shock, confusion and chaos in enemy ranks. Information superiority and networking will act as force multipliers, allowing agile ground units to produce the warfighting impact traditionally provided by far heavier forces, bringing expeditionary warfare to a new level of lethality and combat effectiveness.

... Sea Strike operations will be fully integrated into joint campaigns, adding the unique independence, responsiveness, and on-scene endurance of Naval forces to joint strike efforts. Combined sea-based and land-based striking power will produce devastating effects against enemy strategic, operational and tactical pressure points — resulting in rapid, decisive operations and the early termination of conflict.

### Sea Shield to Protect Our National Interests

Traditionally, Naval defense has protected the unit, the fleet and the sea lines of communication. Tomorrow's Navy will do much more. Sea Shield takes us beyond unit and task-force defense to provide the nation with sea-based theater and strategic defense. Sea Shield will protect our national interests with layered global defensive power based on control of the seas, forward presence and networked intelligence. It will use these strengths to enhance homeland defense, assure access to contested littorals and project defensive power deep inland. As with Sea Strike, the foundation

Figure 1. Sea Power 21



of these integrated operations will be information superiority, total force networking, and an agile and flexible sea-based force. Homeland defense will be accomplished by a national effort that integrates forward-deployed Naval forces with the other military services, civil authorities, and intelligence and law-enforcement agencies. Working with the newly established Northern Command, we will identify, track, and intercept dangers long before they threaten our homeland ...

Maritime patrol aircraft, ships, submarines and unmanned vehicles will provide comprehensive situational awareness to cue intercepting units. When sent to investigate a suspicious vessel, boarding parties will use advanced equipment to detect the presence of contraband by visual, chemical and radiological methods. Forward-deployed Naval forces will also protect the homeland by engaging inbound ballistic missiles in the boost or mid-course phase, when they are most vulnerable to interception. In addition, our nuclear-armed Trident ballistic missile submarine force will remain on silent patrol around the world, providing the ultimate measure of strategic deterrence. These highly survivable submarines are uniquely powerful assets for deterring aggressors who would contemplate using weapons of mass destruction.

... In times of rising tension, prepositioned Naval units will sustain access for friendly forces and maritime trade by employing evolving expeditionary sensor grids and advanced deployable systems to locate and track enemy threats. Speed will be an ally as linked sensors, high-speed platforms, and improved kill vehicles consolidate area control, including the location and neutralization of mines via state-of-the-art technology on dedicated mine warfare platforms and battle group combatants. Mission-reconfigurable Littoral Combat Ships, manned and unmanned aviation assets, and submarines with unmanned underwater vehicles will gain and maintain the operational advantage, while sea-based aircraft and missiles deliver air dominance. The result will be combat-ready forces that are prepared to "climb into the ring" to achieve and sustain access before and during crises.

A next-generation long-range surface-to-air Standard Missile, modernized E-2 Hawkeye radar and Cooperative Engagement Capability will combine to extend sea-based cruise missile defense far inland. This will reinforce the impact of sea-based ballistic missile defense and greatly expand the coverage of Naval area defense. These capabilities represent a broadened mission for our Navy that will lessen the defensive burden on land forces and increase sea-based influence over operations ashore.

*“... In the role of ForceNet chief engineer, we must think outside the boundaries of SPAWAR’s traditional product lines to build a truly robust architecture encompassing the integration of weapon, sensor and information grids ... It is an exciting time to be a part of the SPAWAR team. Our mission is critical, now more than ever, to the Navy and Nation during the war against terrorism. In the weeks and months to come, we must continue to focus on providing the blue prints for ForceNet ...”*

Rear Adm. Kenneth D. Slaght, COMSPAWAR, addressing SPAWAR employees, June 21, 2002

## Offensive and Defensive Independence

... Sea Basing serves as the foundation from which offensive and defensive fires are projected — making Sea Strike and Sea Shield realities. As enemy access to weapons of mass destruction grows, and the availability of overseas bases declines, it is compelling both militarily and politically to reduce the vulnerability of U.S. forces through expanded use of secure, mobile, networked sea bases. Sea Basing capabilities will include providing Joint Force Commanders with global command and control extending integrated logistical support to other Services. Afloat positioning of these capabilities strengthens force protection and frees airlift-sealift to support missions ashore.

Netted and dispersed sea bases will consist of numerous platforms, including nuclear-powered aircraft carriers, multi-mission destroyers, submarines with Special Forces and maritime pre-positioned ships, providing greatly expanded power to joint operations. Sea-based platforms will also enhance coalition-building efforts, sharing their information and combat effectiveness with other nations in times of crisis.

Sea Basing accelerates expeditionary deployment and employment timelines by prepositioning vital equipment and supplies in-theater, preparing the United States to take swift and decisive action during crises. We intend to develop these capabilities to the fullest extent. Strategic sealift will be central to this effort. It remains a primary mission of the U.S. Navy and will be critical during any large conflict fought ashore. Moreover, we will build prepositioned ships with at-sea-accessible cargo, awaiting closure of troops by way of high-speed sealift and airlift. Joint operational flexibility will be greatly enhanced by employing prepositioned shipping that does not have to enter port to off-load. Twenty-first-century operations will require greater efficiencies through the development of joint logistical support ...

## ForceNet is the glue ...

ForceNet is the “glue” that binds together Sea Strike, Sea Shield and Sea Basing. It is the operational construct and architectural framework for Naval warfare in the information age, integrating warriors, sensors, command and control, platforms, and weapons into a networked, distributed combat force. ForceNet will provide the architecture to increase substantially combat capabilities through aligned and integrated systems, functions, and missions. It will transform situational awareness, accelerate speed of decision and allow us to greatly distribute combat power. ForceNet will harness information for knowledge-based combat operations and force survivability and provide real-time enhanced collaborative planning among joint and coalition partners.

Using a total system approach, ForceNet will shape the development of integrated capabilities. These include maritime information processing and command and control components that are fully interoperable with joint systems; intelligence, surveillance, and reconnaissance fusion capabilities to support rapid targeting and maneuver; open systems architecture for

broad and affordable interoperability; and safeguards to ensure networks are reliable and survivable. ForceNet also emphasizes the human factor in the development of advanced technologies. This philosophy acknowledges that the warrior is a premier element of all operational systems. Today, ForceNet is moving from concept to reality. Initial efforts will focus on integrating existing networks, sensors and command and control systems. In the years ahead, it will enable the Naval service to employ a fully netted force, engage with distributed combat power, and command with increased awareness and speed as an integral part of the joint team.

## Global Concept of Operations

Sea Power 21 will be implemented by a Global Concept of Operations that will provide our nation with widely dispersed combat power from platforms possessing unprecedented warfighting capabilities ... The Global Concept of Operations will disperse combat striking power by creating additional independent operational groups capable of responding simultaneously around the world. This increase of combat power is possible because technological advancements are dramatically transforming the capability of our ships, submarines and aircraft to act as power projection forces, netted together for expanded warfighting effect.

... The Global Concept of Operations requires a fleet of approximately 375 ships that will increase our striking power from today’s 12 carrier battle groups, to 12 Carrier Strike Groups, 12 Expeditionary Strike Groups, and multiple missile-defense Surface Action Groups and guided-missile submarines. These groups will operate independently around the world to counter transnational threats and they will join together to form Expeditionary Strike Forces — the “gold standard” of Naval power — when engaged in regional conflict.

## Sea Trial, Sea Warrior and Sea Enterprise

We are developing Sea Strike, Sea Shield and Sea Basing through a supporting triad of organizational processes: Sea Trial, Sea Warrior and Sea Enterprise — initiatives that will align and accelerate the development of enhanced warfighting capabilities for the fleet .... The Navy starts with the fleet, and Sea Trial will be fleet-led. The Commander, U.S. Fleet Forces Command, will serve as Executive Agent for Sea Trial, with Second and Third Fleet commanders sponsoring the development of Sea Strike, Sea Shield and Sea Basing capabilities. These commanders will reach throughout the military and beyond to coordinate concept and technology development in support of future warfighting effectiveness. The Systems Commands and Program Executive Offices will be integral partners in this effort, bringing concepts to reality through technology innovation and the application of sound business principles.

The Navy Warfare Development Command, reporting directly to the Commander, U.S. Fleet Forces Command, will coordinate Sea Trial. Working closely with the fleets, technology development

centers and academic resources, the Navy Warfare Development Command will integrate wargaming, experimentation, and exercises to speed development of new concepts and technologies. They will do this by identifying candidates with the greatest potential to provide dramatic increases in warfighting capability. Embracing spiral development, these technologies and concepts will then be matured through targeted investment and guided through a process of rapid prototyping and fleet experimentation.

***“... I don’t need anymore R&D bills for the old Navy stovepipe — everything we build or buy — will be for a joint environment ...”***

... The Sea Warrior program implements our Navy’s commitment to the growth and development of our people. It will serve as the foundation of warfighting effectiveness by ensuring the right skills are in the right place at the right time. Led by the Chief of Naval Personnel and Commander, Naval Education and Training Command, Sea Warrior will develop naval professionals who are highly skilled, powerfully motivated, and optimally employed for mission success.

Traditionally, our ships have relied on large crews to accomplish their missions. Today, our all-volunteer service is developing new combat capabilities and platforms that feature dramatic advancements in technology and reductions in crew size. The crews of modern warships are streamlined teams of operational, engineering and information technology experts who collectively operate some of the most complex systems in the world. As optimal manning policies and new platforms reduce crew size further, we will increasingly need Sailors who are highly educated and expertly trained.

In July 2001, we established Task Force EXCEL (Excellence through our Commitment to Education and Learning) to begin a revolution in training that complements the revolution in technologies, systems, and platforms for tomorrow’s fleet. We are dedicated to improving our Sailors’ professional and personal development, leadership, military education, and performance. Task Force EXCEL will apply information-age methods to accelerate learning and improve proficiency, including advanced trainers and simulators, tailored skills training programs, improved mentoring techniques, and more effective performance measurement and counseling tools.

... Central to Sea Warrior is Project SAIL (Sailor Advocacy through Interactive Leadership). Project SAIL is moving the Navy toward an interactive and incentivized distribution system that includes guaranteed schools for high-performing non-rated personnel, team detailing, Internet job listings, an information call center and expanded detailer outreach. These actions will put choice in the process for both gaining commands and Sailors, and it will empower our people to make more informed career decisions. Our goal is to create a Navy in which all Sailors — active and reserve, afloat and ashore — are optimally assessed, trained and assigned so that they can contribute their fullest to mission accomplishment.

Among the critical challenges that we face today are finding and allocating resources to recapitalize the Navy. We must replace Cold War-era systems with significantly more capable sensors, net-

works, weapons, and platforms if we are to increase our ability to deter and defeat enemies.

Sea Enterprise, led by the Vice Chief of Naval Operations, is key to this effort. Involving the Navy Headquarters, the Systems Commands and the Fleet, it seeks to improve organizational alignment, refine requirements, and reinvest savings to buy the platforms and systems needed to transform our Navy. Drawing on lessons from the business revolution, Sea Enterprise will reduce overhead, streamline processes, substitute technology for manpower and create incentives for positive change. Legacy systems and platforms no longer integral to mission accomplishment will be retired, and we will make our Navy’s business processes more efficient to achieve enhanced warfighting effectiveness in the most cost-effective manner.

... It is also important that our leaders understand sound business practices so that we can provide the greatest return on the taxpayer’s investment. To meet this need, we are creating educational opportunities to teach our leaders about executive business management, finance and information technology. For example, the Center for Executive Education at the Naval Postgraduate School brings together rising flag officers and private industry decision-makers to discuss emerging business practices. We must also extend this understanding to the deckplates, so that our future leaders gain experience in a culture of strengthened productivity and continually measured effectiveness.

Increased inter-service integration also holds great promise for achieving efficiencies. For example, the Navy and Marine Corps tactical aviation integration plan will save billions of dollars for both services, enhance our interoperability, and more fully integrate our people. Whether it is the U.S. Coast Guard’s Deepwater Integrated Systems Program, new munitions being developed with the U.S. Air Force, joint experiments with the U.S. Army on high-speed vessels, or a new combined intelligence structure with the U.S. Marine Corps, we will share technologies and systems whenever possible ... Savings captured by Sea Enterprise will play a critical role in the Navy’s transformation into a 21st-century force that delivers what truly matters: increased combat capability.

***“... Generation X, what is that? ... All I can say is that the young people in the Navy today fighting in defense of freedom are the best. I am very proud of the job they are doing ...”***

## Global Naval Power

The 21st century is clearly characterized by dangerous uncertainty and conflict. In this unpredictable environment, military forces will be required to defeat a growing range of conventional and asymmetric threats. Sea Power 21 is our vision to align, organize, integrate, and transform our Navy to meet the challenges that lie ahead ... It is global in scope, fully joint in execution, and dedicated to transformation. It reinforces and expands concepts being pursued by the other Services — long-range strike; global intelligence, surveillance, and reconnaissance; expeditionary maneuver warfare; and light, agile ground forces — to generate maximum combat power from the joint team ... □